REMARKS/ARGUMENTS

Claims 6, 7, 9-12, 15-18, 20, and 22-36 are pending in this application. No claims have been cancelled or amended. Reconsideration is requested in the light of the following discussion of the grounds of rejection in relation to the cited references.

Rejections Under 35 US 102

Claims 12, 15, 17, 18, 20 and 22 have been rejected under 35 US 102 as being anticipated by US Patent 5,675,721 (Freedman). To anticipate a claim under 35 US 102, a cited reference must disclose each and every feature as recited in the claim. The rejection is respectfully traversed on the basis that Freedman fails to meet this requirement and the Office Action mischaracterizes the disclosure of Freedman in relation to features of the rejected claims.

Freedman provides pertinent summary of his system and its manner of operation:

> "There are no dedicated servers or clients in the computer network data distribution and retrieval system of the presently claimed invention. Each computer in the system runs an application program that enables that computer to act as a network node. When the application program needs an object that is not stored on the local computer, it sends a request to the remote computer that owns the object." (Col 5, lines 39-45; see also col. 10, lines 41-47.)
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> "In the computer network data distribution and retrieval system of the present invention, every piece of data that the user's computer network access application program can present to the user is in the form of a perceivable object. These perceivable objects are identified by a URI (Universal Resource Identifier) that includes information about the remote computer that owns the object, as well as the object's location on that remote computer.
>
> In addition, the user's computer retains local copies of all perceivable objects that it has requested. These local copies need not contain all of the information relevant to a given perceivable object. Instead, the local copies contain only the information that is necessary to perform the processing tasks currently needed by the user's computer. If a local perceivable object copy does not have certain necessary information, the user's computer requests the information over the network and obtains the needed information from another copy of the perceivable object on another network computer." (Col. 6, lines 24-43.)

Thus, in Freedman's computer network data distribution and retrieval system the use of dedicated servers or clients is explicitly excluded and Freedman requires that all the computers in his distributed network can equally originate and act on requests from that particular computer as well as act on requests from other ones of its peer computers identifying an object to be retrieved.

Freedman is thus clearly distinguished for the invention claimed in the present application in which ". . . the visualization console is operable under user control to communicate . . . requests including identifiers of selected ones of the three dimensional objects stored at the workstations representing a selected view of the three dimensional scene; [and] the workstations are responsive to received requests to operate in parallel to create LOD representations of the respective stored three dimensional objects identified by the requests received from the visualization console and to communicate the LOD representations of the selected three dimensional objects in parallel to the visualization console . . ." (claim 12) and by related recitation in claim 17. Neither is the feature of claim 18 seen in Freedman in which various one of his peer computers "owns" objects nor is the feature recited in the final clause of claim 22.

Freedman explains in detail that an object stored by a computer that "owns" the object is stored together with "a list of pointers to other, smaller perceivable objects whose union comprises a more detailed representation of the structure of the main perceivable object. These smaller perceivable objects can have further sub-objects of their own" (col. 7, lines 35-47). Further, " . . . the sub-objects can optionally send messages requesting more detail about themselves from another computer that has the detail. (Col 7, lines 64-66.) This is consistent with Freedman's "distributed network" in which data pertaining to a particular perceivable object is distributed between a plurality of computers in the network (Freedman, claim 1, B)) and in which a request from any computer in the network for a perceivable object can be satisfied by that computer, if it has stored the requisite data corresponding to the perceivable value of the object requested by the user, or by attempting to retrieve a perceivable object stored at the computer owning the object. If the computer owning the object is unable to

respond, it transfers the request to other computers that store the requested object, based on a list of all the other requesting computers to which the owner computer has been responding. "This process continues until the computer that can respond to requests the fastest is found. Thus, perceivable objects will propagate around the network and every requesting computer will attempt to retrieve objects from nearby, fast computers." (Col. 5, lines 43-65.) Freedman emphasizes that for any particular object, different sub-objects (corresponding to different perceivability values) may be stored at different computers, and that sub-objects may request "more detail about themselves from another computer that has that detail" (col. 7, lines 59-66.)

These teachings by Freedman clearly contemplate operations by computers in his distributed network, including the "local" computer originating a request identifying an object, to retrieve object related data stored if stored at the local computer, or from one or more remote computers selected according to availability of pertinent object data and availability of the remote computer. This manner of operation clearly differentiates for that set forth in the claims pending in the present application, as summarized above.

Consequently, claims 12, 15, 17, 18, 20 and 22 are not anticipated by Freedman and should be allowed.

Rejections under 35 US 103

Claims 6, 7, 9-11, 16 and 23-26 have been rejected under 35 US 103(a) as unpatentable over US Patent 5,675,721 (Freedman) in view of US Patent 5,963,209 (Hoppe). The rejection is respectfully traversed on the basis that the Office Action mischaracterizes the disclosure of Freedman in relation to features of the claims under rejection and that Hoppe does not remedy the deficiencies of Freedman. To establish a prima facie case of obviousness under 35 US 103, the Office Action must establish on a factual basis that the prior art references considered as a suggest the desirability of making the combination of references in the manner contended and the resultant combination must teach or suggest all of the limitations of the claim considered as a whole.

For the reasons discussed above in relation to the rejections under 35 US 102, Freedman fails to teach or suggest features of the invention claimed in the present application in which ". . . requests from a first computer . . . identify three dimensional objects stored at [a] plurality of other computers; [and] operating the plurality of other computers in parallel to create a LOD mesh representation of the selected three dimensional objects stored at the other computers; and communicating . . . the selected three dimensional objects from the plurality of other computers in parallel over the network to the first computer . . ." (claim 6) and by related recitations in claims 23, 28 and 31-33.

Hoppe does not remedy the deficiencies of Freedman. Hoppe teaches a display system which "comprises a transmitting computer 232 (such as a network or file server) and a receiving computer 233 (such as a client computer station or terminal) which are linked via a communications link 234. . . . The transmitting computer 232 stores a PM representation of an arbitrary mesh M in a database 240 of three dimensional models, and runs a progressive transmission software application that implements a transmitting process 244 (FIG. 12(*a*)) for transmitting a PM representation in the database 240 to the receiving computer on the communications link 234. The receiving computer 233 runs a progressive transmission software application that implements a receiving process 246 (FIG. 12(*b*)) for receiving the PM representation from the communication link 234 and rendering views of the mesh at progressively finer levels of detail." (Col. 17:33-60.)

Thus, Hoppe teaches a system in which PM mesh processing operations are implemented only at the transmitting computer 232 by interaction with a database 240 of three dimensional models and transmission to a receiving computer 233 (col. 17, lines 49—55). This is contrary to Freedman who, as discussed in more detail above, specifies: "There are no dedicated servers or clients in the computer network data distribution and retrieval system of the presently claimed invention. Each computer in the system runs an application program that enables that computer to act as a network node" (col. 5, lines 39-41).). Thus, the architecture and manner of implementation of Hoppe's system are different in kind the teachings of Freedman. Attempted hypothetical modification of Freedman's computer network data

distribution and retrieval system in which "[t]here are no dedicated servers or clients" (col. 5, lines 39) to accommodate use of a Hoppe's dedicated "transmitting computer 232" and "a database 240 of three dimensional models" clearly is antithetical to Freedman's teaching and thus cannot suggest an "obvious" modification of Freedman. The assertion in the Office Action that it would have been obvious ". . . to use the mesh of Hoppe with the system of Freedman et al because models in computer graphics are often represented using triangles meshes because it is easier to associate attributes with it (column 1 lines 20-25 and lines 55-60)" is too facile and merely arbitrarily selects one feature from Hoppe and fails to take into account the significantly different processing methodologies and system architectures of Freedman and Hoppe. The assertion in the Office Action fails to consider each reference as a whole and is thus seen to be hypothetical speculation lacking the factual basis necessary to establish a prima facie case of obviousness.

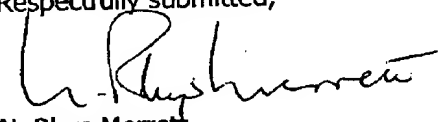
Consequently, none of claims 6, 23, 28, and 32-33 is rendered unpatentable by Freedman in view of Hoppe and each of those claims should be allowable.

Claim 31 is further distinguished from Freedman and Hoppe by the recited "initially, from a first computer coupled to a display, transmitting to and distributively storing at a plurality of second computers a plurality of three dimensional objects together with associated identifiers . . ." As discussed above, all computers in Freedman's system own objects and data relating such objects can be retrieved from the owning computer by any other computer in Freedman's system. Freedman does not teach or suggest that any one computer in his system makes an "initially distributes" objects to other computers. The "initially distributing" feature of claim 7 further distinguishes that claim for similar reasons. Claims 27 and 30 are also additionally distinguished from Freedman in which data relating to various levels of "perceivability values" can be stored at different computers in Freedman's distributed system, see Freedman col. 7, line 54 to col. 8, line 4. Claims 9-11, 24-26, 29 and 34-36 are allowable together with their parent claims.

CONCLUSION.

Favorable consideration and early allowance of the pending claims are respectfully solicited. If there are any remaining issues that could be resolved by discussion, a telephone call to the undersigned attorney at (972) 862-7428 would be appreciated.

Respectfully submitted,



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